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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,202	08/02/2005	Gillian Antoinette Mimnagh-Kelleher	NL 030113	8136

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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
STOUT, MICHAEL C	

ART UNIT	PAPER NUMBER
4123	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/544,202	MIMNAGH-KELLEHER ET AL.	
	Examiner	Art Unit	
	MICHAEL C. STOUT	4123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *1 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 August 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *April 7, 2006 and August 2, 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This detailed action is in regards to United States Patent Application 10/544202 filed on August 2, 2005 and is a first action based on the merits of the application.

Information Disclosure Statement

1. The information disclosure statement filed April 4, 2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein which has not been considered has been indicated by crossing out the reference.

Specification

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. **Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading**. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.

(f) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The specification lacks a heading for the above mentioned sections of the specification.

Claim Objections

3. Claims 1 and 5 are objected to because of the following informalities:

Claims 1 and 5 cite the limitation "the value can be determined form the electric signals," which appears to derive from the preceding statement where "acceleration in each of the mutually perpendicular directions can be converted into an electric signal," however plural signals is not explicitly claimed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding claim 7, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

7. Regarding claim 7, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

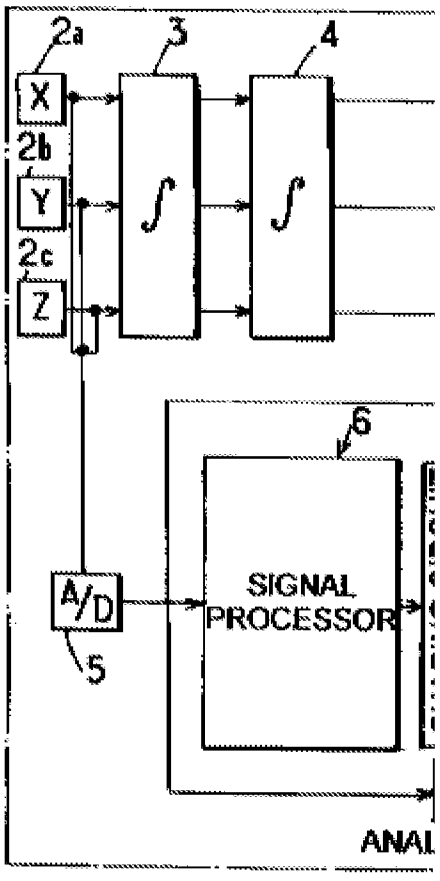
8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Depeursinge et al. (US 6,201,476 B1).

Regarding claims 1 and 5, Depeursinge discloses a device/ ergometer for determining a value that is representative of accelerations in at least two directions perpendicular to each other (see Column 2, Lines 33-40), the device comprising a

sensor system with which the acceleration in each of the mutually perpendicular directions can be converted into an electric signal while the value can be determined from the electric signals by signal processing means (the signals from the accelerometer are fed through an A/D converter to a signal processor, see Column 2, lines 40-45 and Figure 1), characterized in that prior to the signal processing means the electric signals can be added together by means of an adding element (Figure 1 shows the accelerometer elements being added prior to the signal processing means just below 2c). See Figure Below.



Regarding claims 2 and 6, Depeursinge discloses the apparatus of claims 1 and 5 as set forth above, further characterized in that in the adding element the connections conducting the electric signals are arranged in parallel (Figure 1 shows that in the adding element the connections conducting the signals from the sensor s are arranged in parallel).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-2, 5, 6 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Damen et al. EP 1,256,316 A1 in view of Carlijn V. C. Bouten et al. "*A Triaxial Accelerometer and Portable Data Processing Unit for the Assessment of Daily Physical Activity,*" IEEE Transaction of Biomedical Engineering, Vol. 44, No. 3, March 1997.

Regarding Claims 1 and 5:

Damen discloses an ergometer for measuring a value that is representative of a physical effort of an individual, the ergometer comprising a device that includes a sensor system (a system with three accelerometers) with which the acceleration in each of the directions can be converted into electric signals (the sensor generates an analogue signal, see [0022]), while the value can be determined from the electric signals by signal processing means (A/D converter 16, micro-processor 17), characterized in that prior to the signal processing means the electric signals can be added together by means of an adding element (Figure 3 shows an adding element between the amplifiers 15 and signal processing means). Damen fails to teach where the acceleration sensors measure acceleration in each of a mutually perpendicular direction. Bouten teaches an ergometer with a triaxial accelerometer mounted orthogonally which measures acceleration in at least two mutually perpendicular directions (see Page138, Section D).

Both Damen and Bouten teach ergometers. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the device taught by Damen by mounting the accelerometers orthogonally with independent measurement directions as taught by Bouten in order to provide the best prediction of energy expenditure, see Bouten Page 136, Column 2, Paragraph 2.

Regarding claims 2 and 6, Damen teaches the device of claims 1 and 5 as set forth above, characterized in that in the adding element the connections conducting the electrical signals are arranged in parallel, (Damen Figure 3 shows the connections conducting the signals are arranged in parallel).

Regarding claim 10, Damen teaches the ergometer of claim 5 as set forth above, characterized in that the ergometer comprises a coupling to which a computer can be connected (the device can dock with a computer by a link, see Damen [0017]), for transferring stored data from the ergometer to the computer.

14. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damen in view of Bouten as applied to claims 1 and 5 above, and further in view of Raz (US 6,639,537 B1).

Damen/Bouten teaches the device of claims 1 and 5 as set forth above. Furthermore, Damen teaches that the signal processing means comprise a processor,

(see Damen Figure 3) and that the acceleration sensors of Bouten include a band pass filter (Bouten teaches the use of sequential high pass and low pass filters, which is well recognized in the art as an equivalent to a band pass filter) and analog to digital conversion circuit. Damen fails to teach the device wherein the processing means comprises a signal amplifier. Raz teaches analog-to-digital conversion system (ADC) comprising of an analog front-end low noise amplifier, see Figure 4 and Column 4, Lines 43-55.

Both Damen/Bouten and Raz teach analog to digital conversion circuits. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the device taught by Damen to include a low noise amplifier as taught by Raz in order to provide appropriate conditioning of the analog input signal, see Raz Column 4, Lines 43-55.

15. Claims 3 and 11are rejected under 35 U.S.C. 103(a) as being unpatentable over Damen in view of Bouten as applied to claims 1 and 5 above, and further in view of Berther et al. (US 5,983,722).

Damen/Bouten teaches the device of claims 1 and 5 above, characterized in that a sensor system comprises at least a sensor which comprises a piezoelectric material. Damen fail to explicitly teach the device wherein the piezoelectric material is flexible. Piezoelectric materials produce an electric charge when deformed. In piezoelectric accelerometers this is typically done when a proof mass attached to a substrate causes the piezoelectric material to bend as evidence by Berther. Berther teaches a uniaxial

accelerometer wherein the sensor comprises a flexible piezoelectric material (piezoelectric bender element, see Abstract).

Both Damen/Bouten and Berther teach accelerometers. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to substitute the uniaxial in the device taught by Damen/Bouten for the accelerometer taught by Berther in order to achieve a sensor comprising a flexible piezoelectric material.

16. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damen in view of Bouten as applied to claim 5 above, and further in view of Richardson et a. (US 5,976,083).

Regarding claim 7, Damen/Bouten teaches the device of claim 5 as set forth above, wherein the value is correlated to an energy value (Bouten teaches a correlation between the acceleration value and an energy value, See Page 141 Section IV and Page 137, Column 1, and Damen teaches a device wherein the input is used to calculate the PAI which is correlated to an energy value i.e. the total energy expenditure and basal metabolic rate, see [0006] and [0010]). Damen fails to teach the device characterized in that the ergometer comprises a database in which the value correlates to a nutritional value (calories). Richardson teaches an activity monitoring device comprising a system which monitors locomotion and hart rate information which is translated into useful information (calories burned/nutritional value) and stored in a database see Column 16, Line 55 thru Column 17, Line 4.

Both Damen/Bouten and Richardson teach activity monitoring devices. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the device taught by Damen/Bouten to include a database in which the value is correlated to a nutritional value of energy expenditure as taught by Richardson in order to provide useful information to the user, see Column 16, Line 55 thru Column 17, Line 4.

Regarding claim 8, Damen/Bouten/Richardson teaches the Ergometer as claimed in claim 7 as set forth above, characterized in that the ergometer comprises a memory (memory 18, see Damen Figure 3) in which energy values can be stored over a certain period of time (the processor 17 stores the calculated PAI's in a memory, see Figure [0024]).

Regarding claim 9, Damen/Bouten/Richardson teaches the Ergometer as claimed in claim 7 as set forth above, characterized in that the ergometer comprises a screen (LCD 3, see Damen [0028]) on which the instantaneous effort and/or average effort can be displayed in energy values over a certain period (features the PAI averaged over time or more selectable periods, see [0028]).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Form 892 for pertinent prior art not relied upon, along with additional information of the references cited in this office action.

18.

Contact Info

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL C. STOUT whose telephone number is (571)270-5045. The examiner can normally be reached on M-F 7:30-5:00 Alternate (Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe Del Sole can be reached on 571-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCS

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 4123